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08/721,262, now U.S. Patent No. 5,777,060, and 08/749,754, now U.S. Patent No. 5,786,439, the disclosures of which have previously been incorporated herein by reference.

Please replace the paragraph on page 20, lines ~~20-28~~ with the following paragraph:

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In some embodiments, the polymer matrix containing the amplification components can be further coated with a permeable layer such as a hydrogel, cellulose acetate, P-HEMA, nafion, or glutaraldehyde. A number of hydrogels are useful in the present invention. For those embodiments in which glucose monitoring is to be conducted, the preferred hydrogels are those which have been described in co-pending application Ser. No. 08/749,754, now U.S. Patent No. 5,786,439, the disclosure of which has previously been incorporated herein by reference. Alternatively, hydrogels can be used as the polymer matrix which encase or entrap the amplification components. In still other embodiments, the amplification components can be covalently attached to a hydrogel.

Please replace the paragraph on page 31, lines 25-26 with the following paragraph:

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Other suitable silicone-containing polymers are described in co-pending application Ser. No. 08/721,262, now U.S. Patent No. 5,777,060.

IN THE CLAIMS

Please cancel claims 1-20 and add ~~claims~~ 21-50 as follows:

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--21. (NEW) A biocompatible polymer matrix comprising an amplification component capable of producing a polyhydroxylated analyte signal upon interrogation by an optical system, wherein said amplification component requires a photo-induced electron transfer for production of said signal.--

--22. (NEW) The biocompatible polymer matrix in accordance with claim 21, wherein said biocompatible polymer matrix is a solid substrate.--

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--23. (NEW) The biocompatible polymer matrix in accordance with claim 22, wherein said solid substrate is a member selected from the group consisting of polyurethane, silicon, silicon-containing polymer, chronoflex, P-HEMA or sol-gel.--

--24. (NEW) The biocompatible polymer matrix in accordance with claim 21, wherein said biocompatible polymer matrix comprises a hydrophilic polymer.--

--25. (NEW) The biocompatible polymer matrix in accordance with claim 21, wherein said biocompatible polymer is a member selected from the group consisting of a polyurethane, a silicone, an acrylic, and a silicone containing polyurethane.--

--26. (NEW) The biocompatible polymer matrix in accordance with claim 21, wherein said biocompatible polymer matrix is a member selected from the group consisting of a disk, a cylinder, a patch, a microsphere and a refillable sack.--

--27. (NEW) The biocompatible polymer matrix in accordance with claim 26, wherein said biocompatible polymer matrix is a microsphere.--

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--28. (NEW) The biocompatible polymer matrix in accordance with claim 21, wherein said biocompatible polymer matrix is implanted subdermally.--

--29. (NEW) The biocompatible polymer matrix in accordance with claim 21, wherein said biocompatible polymer matrix is permeable to glucose.--

--30. (NEW) The biocompatible polymer matrix in accordance with claim 21, wherein said biocompatible polymer matrix is permeable to oxygen.--

--31. (NEW) The biocompatible polymer matrix in accordance with claim 21, wherein said biocompatible polymer matrix is optically transparent.--

--32. (NEW) The biocompatible polymer matrix in accordance with claim 21, further comprising a biocompatible shell.--

--33. (NEW) The biocompatible polymer matrix in accordance with claim 32, wherein said biocompatible shell is a member selected from the group consisting of dialysis fiber, teflon cloth, resorbable polymers and islet encapsulation materials.--

--34. (NEW) The biocompatible polymer matrix in accordance with claim 21, further comprising a mesh.--

--35. (NEW) The biocompatible polymer matrix in accordance with claim 21, wherein said amplification component is covalently attached to said biocompatible polymer matrix.--

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--36. (NEW) The biocompatible polymer matrix in accordance with claim 21, wherein said amplification component comprises a boronic acid moiety.--

--37. (NEW) A biocompatible polymer matrix comprising a fluorescent transducer component that binds polyhydroxylate analyte and whose fluorescence is modulated by a photo-induced electron transfer process, wherein upon illumination of the fluorescent transducer component in the presence of polyhydroxylate analyte a change in fluorescence is observable that is correlatable with the concentration of bound polyhydroxylate analyte.--

--38. (NEW) The biocompatible polymer matrix of claim 37, wherein the change in fluorescence is measured as a change in fluorescent intensity.--

--39. (NEW) The biocompatible polymer matrix of claim 37, wherein the change in fluorescence is measured as a change in the average fluorescent lifetime of the fluorescent transducer component.--

--40. (NEW) The biocompatible polymer matrix of claim 37, wherein polyhydroxylate analyte binding to the fluorescent transducer component produces an increase in the fluorescence of the fluorescent transducer component.--

--41. (NEW) The biocompatible polymer matrix of claim 37, wherein polyhydroxylate analyte binding to the fluorescent transducer component produces a decrease in the fluorescence of the fluorescent transducer component.--

--42. (NEW) The biocompatible polymer matrix of claim 37, wherein the photo-induced electron transfer process of the fluorescent transducer component is modulated by polyhydroxylate analyte binding.--

--43. (NEW) The biocompatible polymer matrix in accordance with claim 37, wherein said fluorescent transducer component comprises a boronic acid moiety.--

--44. (NEW) A biocompatible polymer matrix comprising an amplification component capable of producing a signal upon interrogation by an optical system, wherein the signal is modulated by polyhydroxylate analyte binding and wherein polyhydroxylate analyte binding modulates a photo-induced electron transfer process.--

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--45. (NEW) The biocompatible polymer matrix of claim 44, wherein the signal is measured as a change in fluorescent intensity of the amplification component.--

--46. (NEW) The biocompatible polymer matrix of claim 44, wherein the signal is measured as a change in the average fluorescent lifetime of the amplification component.--

--47. (NEW) The biocompatible polymer matrix of claim 44, wherein bound polyhydroxylate analyte produces an increase in the signal.--

--48. (NEW) The biocompatible polymer matrix of claim 44, wherein bound polyhydroxylate analyte produces a decrease in the signal.--

--49. (NEW) The biocompatible polymer matrix of claim 44, wherein the photo-induced electron transfer process is modulated by bound polyhydroxylate analyte.--

--50. (NEW) The biocompatible polymer matrix in accordance with claim 44, wherein said amplification component comprises a boronic acid moiety.--